

## Heterosis studies in bitter gourd (*Momordica charantia* L.) for yield and yield related attributes

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### SUMMARY

An experiment was carried out during 2008-09 at Vegetable section, Division of Horticulture, University of Agricultural Sciences, Gandhi Krishi Vignana Kendra, Bangalore on heterosis studies in bitter gourd for yield and yield related attributes by using six lines and four testers in line x tester mating design. The parents Panurthy, Coimbatore Long and VRBT-100 were observed to be top performing parent for fruit yield per vine. The negative heterosis which was desirable for days to first male and female flower appearance, number of node at first female flower appears, days to first harvest, days to fifty per cent flowering, number of seeds per fruit, were common in most of the cross. Appreciable heterosis was recorded over better parent and standard parent for all the traits studied. The hybrids Coimbatore Long x Panurthy, VRBT-100 x Panurthy and Green Long x Panurthy were recorded to be three best performing  $F_1$  hybrids for fruit yield per vine with an yield of 2.32, 2.19 and 2.06 kg and also these hybrids exhibited higher standard parent heterosis of 55.10, 46.90 and 37.65 per cent, respectively. These hybrids can be commercially exploited for higher yield.

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**Key words :** Bitter gourd, Heterosis, Line x Tester

**A**mong the cultivated cucurbits, bitter gourd (*Momordica charantia* L.) is one of the most important vegetable grown throughout the country for its high nutritive value and medicinal properties. In our country, a wide range of variability in vegetative and fruit characters is available in this crop. But unfortunately very little attention has been paid for its general improvement by using wild genotypes. A speedy improvement can be brought about by assessing the genetic variability and exploitation. The heterosis is much easier in cross pollinated crops and bitter gourd being monoecious, provides ample scope for the utilization of hybrid vigour on commercial scale. The present investigations were, therefore, undertaken to study the nature and magnitude of heterotic effects among the economic characters in bitter gourd.

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### MATERIALS AND METHODS

The present investigation was undertaken at Vegetable section, Horticultural Research Station, Division of Horticulture, University of Agricultural Sciences, Gandhi Krishi Vignana Kendra, Bangalore, during the year 2008-09. The experimental material comprised of six lines *viz.*, VRBT-100 ( $L_1$ ), Arka Harit ( $L_2$ ), White Long ( $L_3$ ), Coimbatore Long ( $L_4$ ), Green Long ( $L_5$ ) and VRBT-103 ( $L_6$ ) and four testers *viz.*, IC-42261 ( $T_1$ ), Chidambaram Small ( $T_2$ ), Nanjangood Local ( $T_3$ ) and Panurthy ( $T_4$ ). Twenty four hybrids were generated by using line x tester mating design; MBTH-101 was used as a standard check. These materials were replicated thrice in a randomized block design. The plants were spaced at 1.5m apart between rows and 0.75m apart between plants. The standard agronomical practices were followed according to package of practices at University of Agricultural Sciences, Bangalore. Data were recorded from five randomly selected plants in each treatment over the replications for the characters *viz.*, vine length at 45, 60 and 90 days after sowing (DAS), productive vine length, days taken for first male and female flower appearance, days taken for fifty per cent flowering, node at first female flower appearance, number of primary branches, days to first harvest, fruit length, sex ratio, per cent fruit set, number of seeds per fruit, number of fruits per vine, fruit